

California Global Warming Solutions Act of 2006

GHG Reporting Tool Training

Cement Plants (CPs)

California Air Resources Board
March 26, 2009

Participation Information

- Webinar Registration Information

(need to pre-register to participate)

<https://www2.gotomeeting.com/register/345537296>

- Slides for Today's Training:

<http://www.arb.ca.gov/cc/reporting/ghg-rep/ghg-tool.htm>

- Stepwise Reporting Tool Guidance for GSCs:

<http://www.arb.ca.gov/cc/reporting/ghg-rep/ghgstepwisegsc.pdf>

- Regulation and Staff Report

(includes Regulation and other materials):

<http://www.arb.ca.gov/regact/2007/GHG2007/GHG2007.htm>

Using the Webinar

- Preregistration is required, see previous slide for link
- For Audio, each participant has a unique dial-in and access code
 - Numbers visible after joining webinar
 - Must enter Audio PIN to join audio
 - Call is billed as normal long-distance call
- ARB staff will mute/and unmute lines
 - “Raise Hand” to have your line activated for verbal questions
- Type questions into Chat box for text questions

Additional Reporting Tool Training

(see training website for materials)

Reporting Sector	Date	Time (PDT)
General Stationary Combustion	March 17	10:00 a.m. to 12:00 p.m.
Cement Plants	March 26	10:00 a.m. to 12:00 p.m.
Electricity Retail Providers & Marketers	March 26	1:00 p.m. to 3:00 p.m.
Electricity Generating & Cogeneration Facilities	March 27	10:00 a.m. to 12:00 p.m.
Refineries & Hydrogen Plants; Oil & Gas Production	March 30	9:30 a.m. to 12:30 p.m.

Agenda

- Introduction and Overview
- Summary of Requirements
- Reporting Tool Overview
- Case Study – Basic Facility
- Wrap-up

Preparing for Reporting

- 2009: Must report 2008 emissions in 2009
 - See Regulation and Guidance for methods
 - Reports due June 1, 2009
 - Verification is optional for 2009 emissions reports
- 2010: Emissions data report must meet full requirements of the regulation
 - Monitoring equipment, procedures should be in place by January 1, 2009
 - Everyone must verify their 2009 emissions data reports in 2010
- See Regulatory Advisory
 - <http://www.arb.ca.gov/cc/reporting/ghg-rep/ghgschedadvisory.pdf>

Purpose of this Training

- Demonstrate use of GHG Reporting Tool for reporting
- Assumes basic understanding of reporting requirements
 - Will not discuss GHG calculation methods
 - Refer to extensive Guidance Documents for questions about calculating GHG emissions
 - <http://www.arb.ca.gov/cc/reporting/ghg-rep/ghg-rep-guid/ghg-rep-guid.htm>
 - Also see Cement Plant reporting workshop slides presented in December 2008 for an overview
 - <http://www.arb.ca.gov/cc/ccei/meetings/meetings.htm>

Summary of Reporting Requirements for Cement Plants (CPs)

Background

- The regulation requires CPs to estimate & report their GHG emissions
- CPs are defined in the GHG regulation as:
 - Industrial structures, installations, plants, or buildings primarily engaged in manufacturing Portland, natural, masonry, pozzolanic, and other hydraulic cement

Reporting Requirements

- Fuel use, by fuel type for facility
 - Provide fuel use by individual process units where separately metered
- Stationary combustion emissions by type (i.e., CO₂, CH₄, N₂O)
 - CO₂ from biomass fuels reported separately
 - Emissions subdivided for each fuel used
- Process CO₂ emissions from cement manufacturing

Reporting Requirements (Con't)

- Process, feedstock, and production data
 - Total Organic Carbon (TOC) content of raw materials
- Emissions from on-site electricity generation or cogeneration units
- Indirect energy use (electricity, heat, cooling)
- Fugitive CH₄ emissions from coal fuel storage
- Cement efficiency metrics

GHG Reporting Tool Overview

Cement Plants (CPs)



GHG Reporting Tool

- GHG Reporting Tool designed to directly address needs of reporters
- Provides reporting, QA, certification, tracking, and verification access
- Allows password-protected access by multiple facility users
- Training Site available for practice
- Shares software platform used by U.S. EPA and The Climate Registry

General Usage of the Tool

Using the GHG Reporting Tool Year 1 –2008 Report Year

1. Register Your First Facility & User Account (Home Page)
2. Register Additional Facilities (Inside Tool)
3. Complete Basic Facility Information
4. Set Up Additional Users
5. Create Annual Report Structure (Emitting Activities, Units...)
6. Enter Annual Data for 2008
7. Submit Annual 2008 Report

Using the GHG Reporting Tool Year 2 – 2009 Report Year

1. Update Annual Report Structure If Needed.
2. Enter Annual Data for 2009
3. Submit Annual 2009 Report

- ❖ Complete reports must be certified, and then verified as specified in the regulation.
- ❖ Verification is optional for reports submitted in 2009

Step 1: Preparing for Reporting

- Review Reporting Tool Primer
 - <http://www.arb.ca.gov/cc/reporting/ghg-rep/ghg-tool.htm>
- Review step-by-step guidance for GSC reporting using tool
 - <http://www.arb.ca.gov/cc/reporting/ghg-rep/ghgstepwisegsc.pdf>
- Collect Facility Information
 - Equipment subject to reporting
 - Fuel use records (facility level & by meter)
 - Purchase records for electricity, heat, cooling

Workflow for Reporting Tool

2. Register using ARB ID and Access Code
3. Input facility descriptive information
4. Input facility configuration for reporting
 - Add emitting activities, fuels, devices
5. Input fuel use and emissions for defined sources
6. Report energy and production data
7. QA and Certification of data

Workflow for Reporting Tool

2. Register using ARB ID and Access Code
3. Input facility descriptive information
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Step 2

Register using ARB ID and Access Code

- Use ARB ID and Access Code provided by ARB
- You must “Register” first, use the Registration button, not “Login”
- The first person to register is the default Facility Manager
 - Facility Manager certifies data as complete and accurate
 - Two people may be designated as Facility Managers

Step 2

Create Account

- Enter name, address, email
- Email address must be unique
 - If email address is already in system, use that account to associate with additional facilities
 - “Register Additional Organization” after login
- Create personal User ID and Password
 - Login using this information
- Accept User Agreement
- Account is created

Registration



Welcome to the California Air Resources Board's Online Greenhouse Gas (GHG) Reporting Tool.

The reporting tool has been designed to meet the needs of companies and agencies reporting GHGs and other information required by the State's mandatory reporting regulation. It also serves as a unified tool for facility tracking and certification of emission reports as well as data verification by third-party verifiers, as required by the regulation.

Because ARB's GHG reporting tool shares its basic software platform with existing reporting and tracking tools developed for U.S. EPA and The Climate Registry, it is also designed to ease transitions to potential regional and national reporting programs in the future.

A User Guide for the reporting tool is available at the California's mandatory reporting web page, at
<http://www.arb.ca.gov/cc/reporting/ghg-rep/ghg-rep.htm>.

User Login



User ID *

Password *

Login

Forgot your [User ID](#) or [Password](#)

Register for an ARB login

To activate a user account for an organization, click the Register button.

Register

[Home](#) : [Visit ARB Mandatory Reporting Page](#) : [Return to Top](#)

Click Register button to set up your Facility and Reporting Tool user login.

Registration (con't)



[Contact Us](#)

[Help](#)

Register your organization

Complete the information below with the ARB ID and Access Code provided to your organization by ARB. Required fields are indicated by a red asterisk (*).

If you have not received a letter from the ARB and have questions regarding the application, please select the Contact Us link at the top of the page.

Enter Information

Already a User?	<input type="button" value="v"/>	← Select No. If Yes (already user) proceed to log in to the GHG Emissions Reporting Tool.
Organization Type *	<input type="button" value="v"/>	← Select "Facility"
ARB-ID *	<input type="text"/>	← ARB ID and Access Code for your facility provided by ARB via letter.
Access Code *	<input type="text"/>	

[Next](#) ← Click Next button to proceed with the GHG Emissions Reporting Tool registration.

[Home](#) : [Visit ARB Mandatory Reporting Page](#) : [Return to Top](#)

Registration (con't)



[Contact Us](#)

[Help](#)

Complete User Registration

Enter Information

Mr., Mrs., Ms.	<input type="text"/>
First Name *	<input type="text"/>
Last Name *	<input type="text"/>
Middle Initial	<input type="text"/>
Phone Number *	<input type="text"/>
Fax Number	<input type="text"/>
Company Affiliation	<input type="text"/>
Address *	<input type="text"/>
Address	<input type="text"/>
City *	<input type="text"/>
Country *	<input type="text"/>
State *	<input type="text"/>
Postal Code *	<input type="text"/>

Important: To complete registration, enter a valid email address.

Email Address *	<input type="text"/>
Re-enter email address *	<input type="text"/>
Email Salutation (e.g. Bill Smith,)	<input type="text"/>
Create your User ID *	<input type="text"/>
Create your password *	<input type="text"/>
Re-enter password *	<input type="text"/>

Enter all required fields.

Choose a GHG Emissions Reporting Tool username and password.

[Back](#) [Next](#) Click the Next button to proceed with user registration.

[Home](#) : [Visit ARB Mandatory Reporting Page](#) : [Return to Top](#)

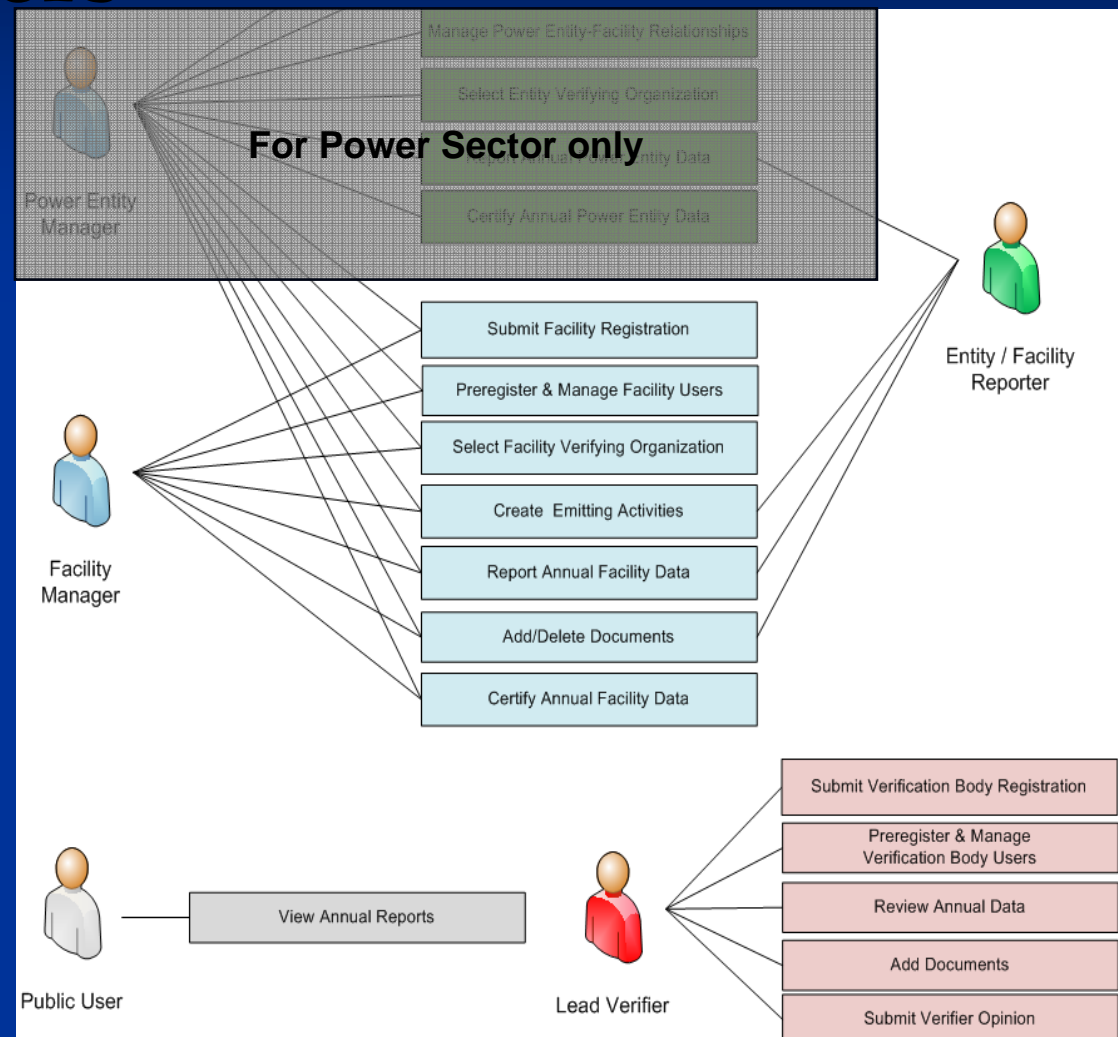
Step 3

Input Facility Descriptive Info

- Login to account with personal User ID and password (not ARB ID)
- Facility Details
 - Primary & Secondary Sector
 - Confidential data flag
- Addresses
 - Mailing and physical
- Geographic Location (lat/long)
 - <http://www.batchgeocode.com/lookup/> (example only)
- Contacts (i.e., Users)
 - Allow others access to facility data

Facility Managers and Facility Reporters

- Access and responsibilities
- Facility manager roles and reporter roles
- Two facility managers possible



Facility Information



California Environmental Protection Agency
AIR RESOURCES BOARD

[My Profile](#) : [Contact Us](#) : [Log Out](#)

[Facility](#) [Annual Reporting](#) [Reports](#)

Logged in as Facility Manager (source)

[Print](#) [Help](#)

Facility Information

Use this page to manage your facility's source inventory information.

The tabs below allow you to manage the following data: 1.) Facility Details, 2.) Addresses, 3.) Geographic Location, 4.) Contacts, 5.) Entity Relationships, 6.) Verification Bodies, 7.) Emitting Activities, 8.) Generating Units, 9.) Devices, 10.) Energy and Production, 11.) Facility Documents, 12.) Facility and Unit Submissions, and 13.) ARB Notifications.

For detailed instructions, please select the Help button.

Facility Name ABC Facility

ARB ID 123456

[Back](#)

Click on a tab to view and modify specific information.

[Facility Details](#) [Addresses](#) [Geographic Location](#) [Contacts](#) [Associated Entity](#) [Verification Bodies](#) [Emitting Activities](#)
[Generating Units](#) [Devices](#) [Energy and Production](#) [Facility Documents](#) [Facility and Unit Submissions](#) [ARB Notifications](#)

Facility Details

Facility Name ABC Facility

ARB ID * 123456

Access Code test

Primary Reporting Sector * Hydrogen Plant

Secondary Sectors
(hold ctrl to select multiple)

Cogeneration Facility
Electricity Generation

NAICS (First 2 digits) * 33 - Manufacturing

NAICS * 33121 - Iron and Steel Pipe and Tube Manufacturing from Purchased Steel

Nameplate Capacity (MW) 2486

Description

Please indicate below whether you prefer that non-emissions data or information provided in this report be designated as preferred confidential.
For definition of preferred confidential, see help text.

Preferred Confidential ☒

Facility Details

[Save](#)

Use the buttons at the bottom of each tab to add or modify information.

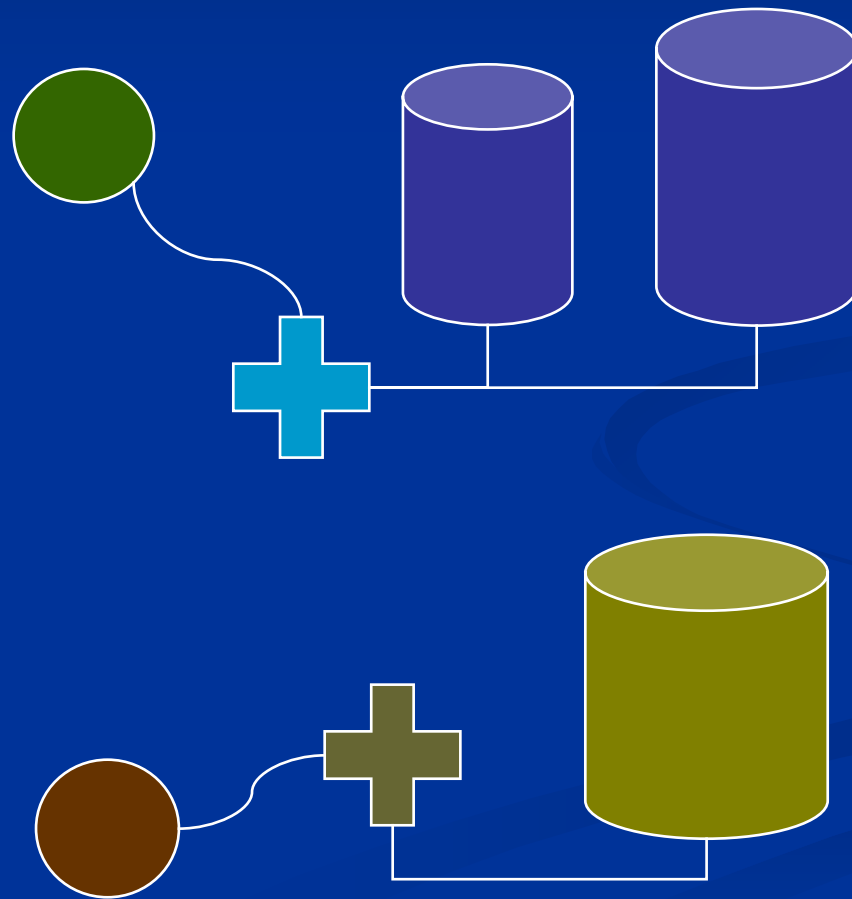
Step 3:

Demonstrate Input of Facility Info

Note: Full demonstration of Step 2 is available from the GSC Webinar at:
<http://www.arb.ca.gov/cc/reporting/ghg-rep/ghg-tool.htm>

Case Study

Basic Facility

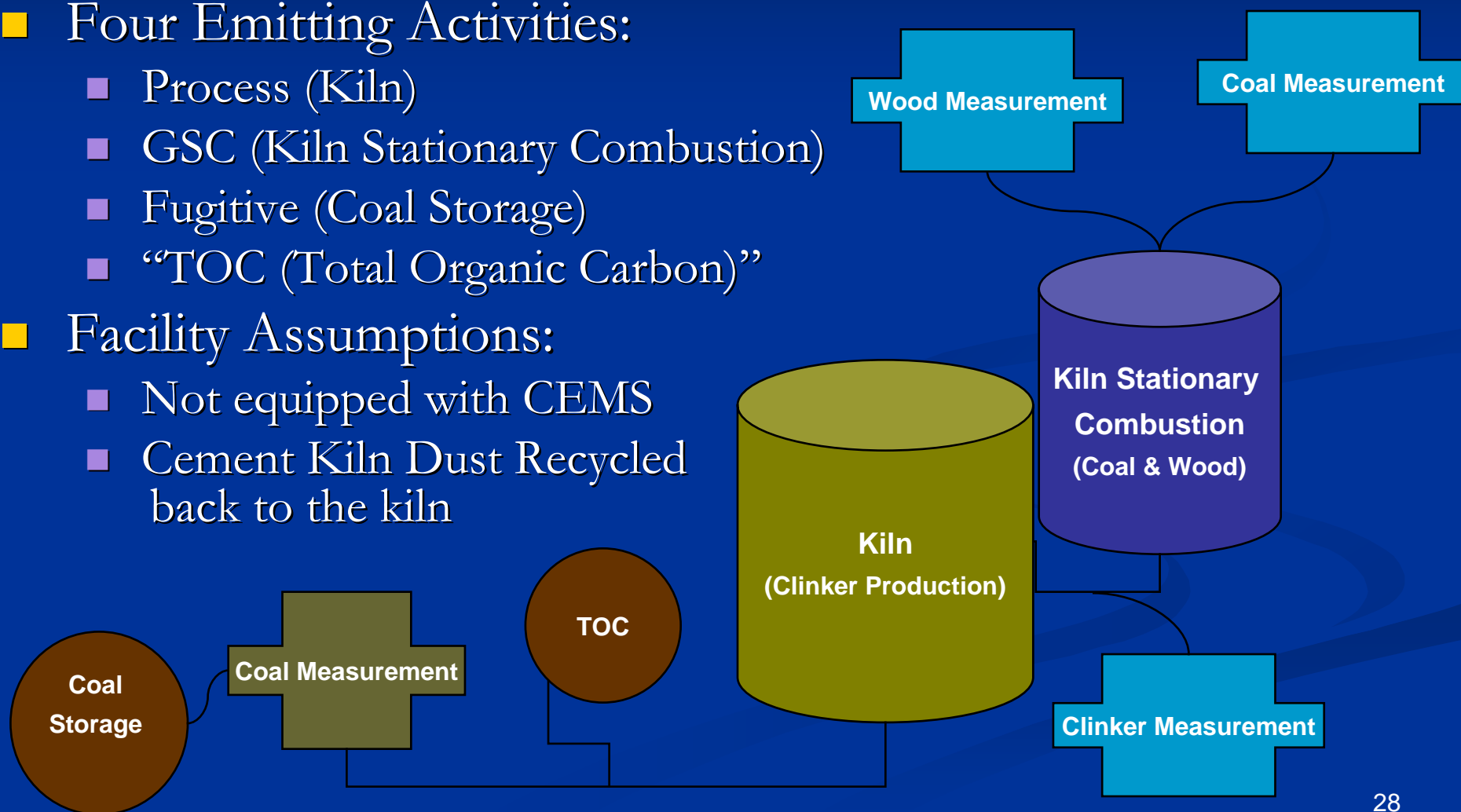


Case Study

Basic Facility Reporting

- Facility Configuration
- Four Emitting Activities:
 - Process (Kiln)
 - GSC (Kiln Stationary Combustion)
 - Fugitive (Coal Storage)
 - “TOC (Total Organic Carbon)”

- Facility Assumptions:
 - Not equipped with CEMS
 - Cement Kiln Dust Recycled back to the kiln



Workflow for Reporting Tool

2. Register using ARB ID and Access Code
3. Input facility descriptive information
4. Input facility configuration for reporting
 - Add emitting activities, fuels, devices
5. Input fuel use and emissions for defined sources
6. Report energy and production
7. QA and Certification of data

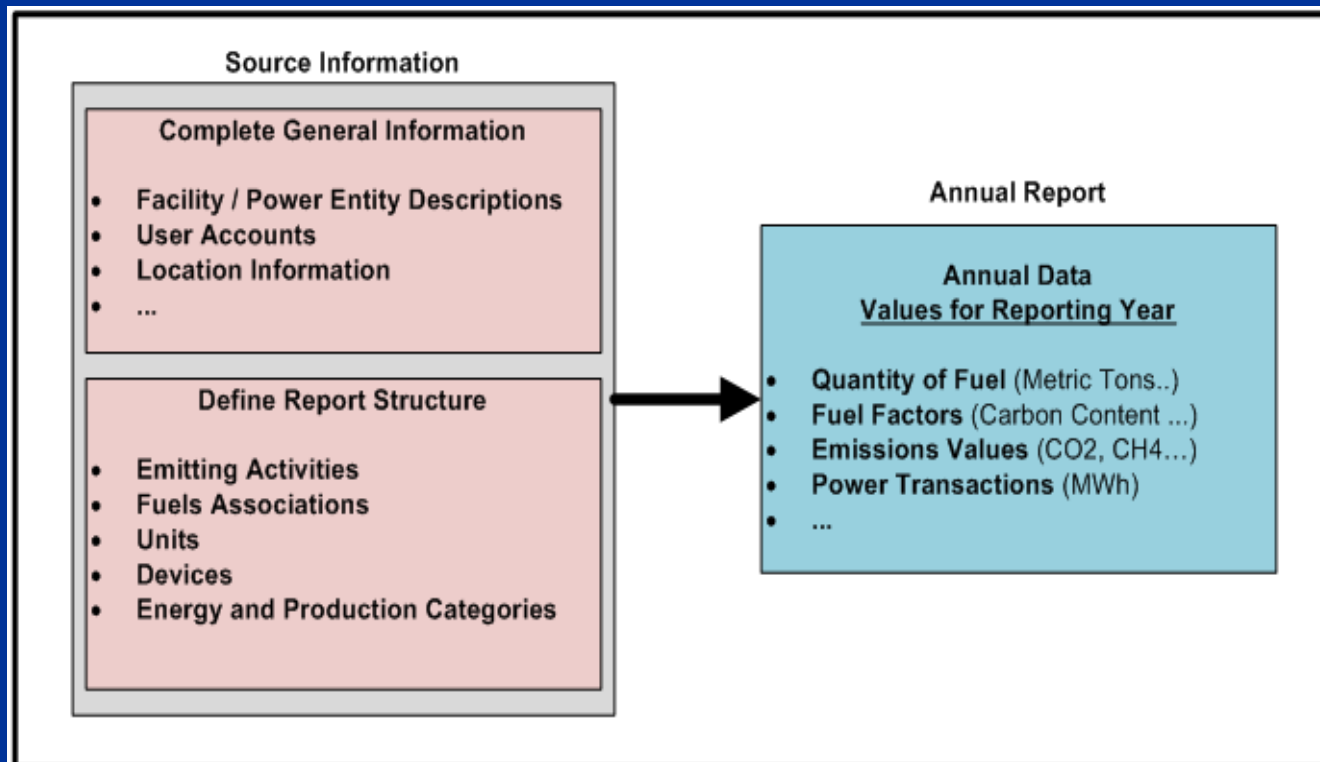
Step 4

Input Facility Configuration

- Emitting Activities
 - And associated fuels
- Devices (i.e., fuel meters)
 - And associated fuels (as applicable)
- Generating Units
 - Electricity or Cogeneration
- Energy and Production
 - Indirect energy use data
 - Cement efficiency metrics data
 - Electricity or Cogen info (as applicable)

Sequence for Reporting

- A. First, set up emitting activities and fuels, generating units, devices (Step 4)
- B. Next, add fuel use, fuel factors, and emissions for items designated in Part A (Step 5)



Summary of Key Terms

■ Emitting Activity


- Equipment or process with capacity to produce GHG emissions
- Can be individual activities (e.g., one cement kiln) or a complete reporting category (e.g., all facility stationary combustion)
- Must meet 95% accuracy unless de minimis emissions

■ Device

- Used to indicate the presence of a fuel meter used for reporting fuel use, not emissions
- Not a source of emissions and not a piece of emitting equipment
- Not required to meet 95% accuracy unless used for emissions calculations

Adding Emitting Activities & Fuels/ Feedstocks

Facility Details	Addresses	Geographic Location	Contacts	Associated Entity	Verification Bodies	Emitting Activities	Generating Units
Devices	Energy and Production	Facility Documents	Facility and Unit Submissions	ARB Notifications			
Emitting Activities							
	Emitting Activity Name	Emitting Activity Category	Activity Type	Status	Aggregation Level		
<input type="radio"/>	Coal Storage	Fugitive	Coal Storage	Operating	Summed		
<input type="radio"/>	Kiln - Clinker Production	Process	Rotary Kiln	Operating	Summed		
<input type="radio"/>	Kiln Stationary Combustion	Stationary Combustion	Rotary Kiln	Operating	Summed		
<input type="radio"/>	TOC	Process	Rotary Kiln	Operating	Summed		

- 
- Regulation requires separate reporting for:
 - kiln & non-kiln units
 - Generating & cogeneration units
 - Recommended that multiple kilns be set up as separate emitting activities
 - Setup Total Organic Carbon (TOC) as an “Emitting Activity”

Emitting Activity Category



[My Profile](#) : [Contact Us](#) : [Log Out](#)

[Facility](#) [Annual Reporting](#)

Logged in as Michael Gabor

[Help](#)

Edit Emitting Activity

Use this page to edit an emitting activity. Enter the required fields below, and associate fuels more fuels from the Available Fuels list and use the arrow controls to move them to the Current Fuels list.

- 1.) Unique Emitting Activity Name is used to aid in inventory analysis.
- 2.) Emitting Activity Category and Type are used to categorize your emissions and fuels data.
- 3.) The Status field establishes whether this activity is currently operating for your source.
- 4.) Aggregation Level is used to establish a hierarchy of your data.
 - a.) Use Summed for all emitting activities representing the total emissions for your facility.
 - b.) Supplemental refers to additional emitting activities which you do not want included in your report.
 - c.) Optional data refers to all emitting activities for which you are not required to report (ex. Wt. %).
- 5.) The fuel list is limited to fuels, feedstocks, and other inputs available for your emitting activity.

Facility

Facility Name Gabor Ltd
ARB ID 4321

Edit Emitting Activity

Emitting Activity Name

Emitting Activity Category

Activity Type

Status

Aggregation Level

Available Fuels (Fuels, Feedstocks, or Other)

Current Fuels (Fuels, Feedstocks, or Other)

- Each emitting activity is categorized as to type of emissions - stationary, process, fugitive, etc.

- CEMS

- Equipped:** select Stationary Combustion and Process to report kiln process and combustion emissions under the same emitting activity

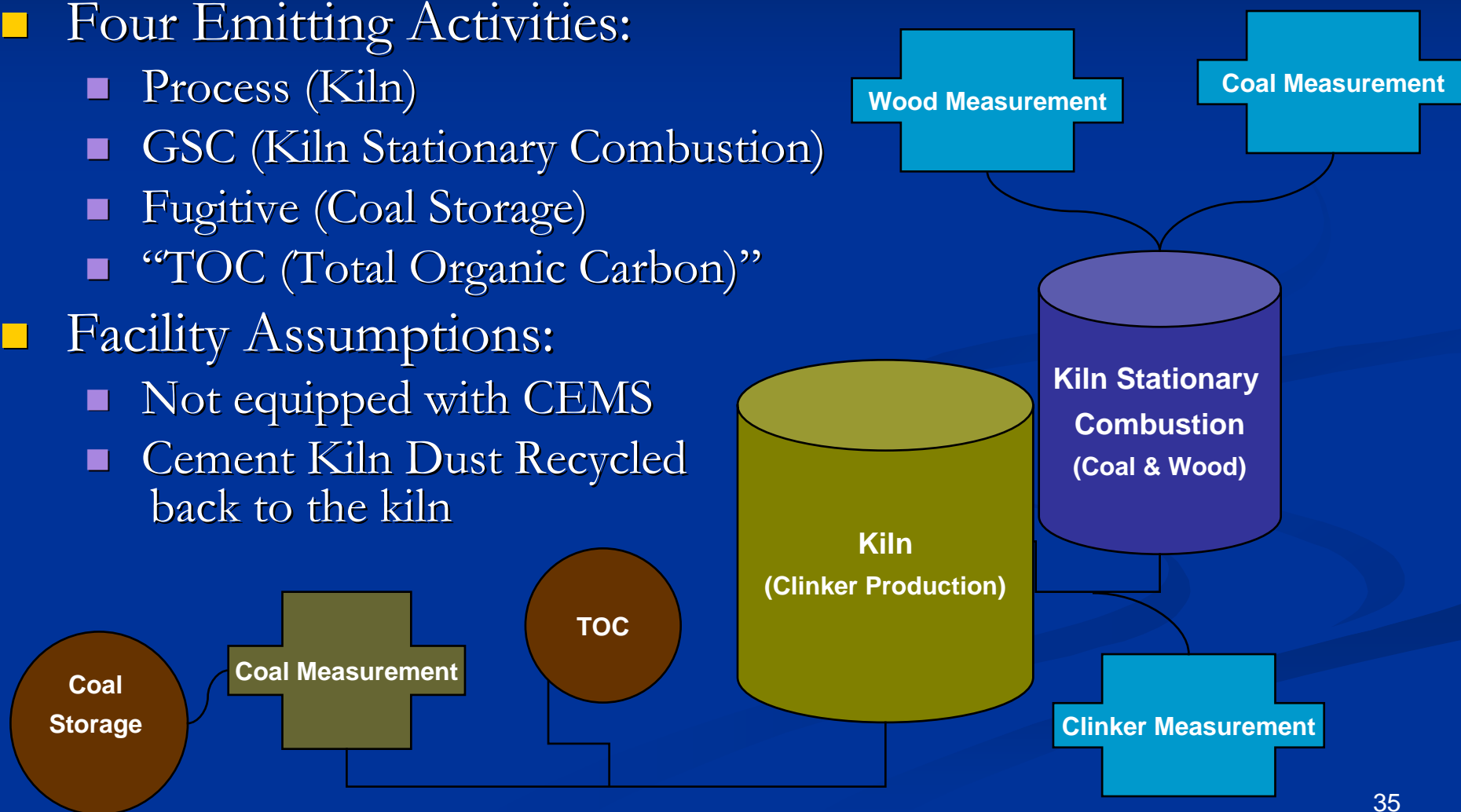
- Not Equipped:** set up separate Process and Stationary Combustion emitting activities

Case Study

Basic Facility Reporting

- Facility Configuration
- Four Emitting Activities:
 - Process (Kiln)
 - GSC (Kiln Stationary Combustion)
 - Fugitive (Coal Storage)
 - “TOC (Total Organic Carbon)”

- Facility Assumptions:
 - Not equipped with CEMS
 - Cement Kiln Dust Recycled back to the kiln



Step 4:

Demonstrate Input Facility Configuration

Workflow for Reporting Tool

2. Register using ARB ID and Access Code
3. Input facility descriptive information
4. Input facility configuration for reporting
 - Add emitting activities, fuels, devices
5. Input fuel use and emissions for defined sources
6. Report energy and production data
7. QA and Certification of data

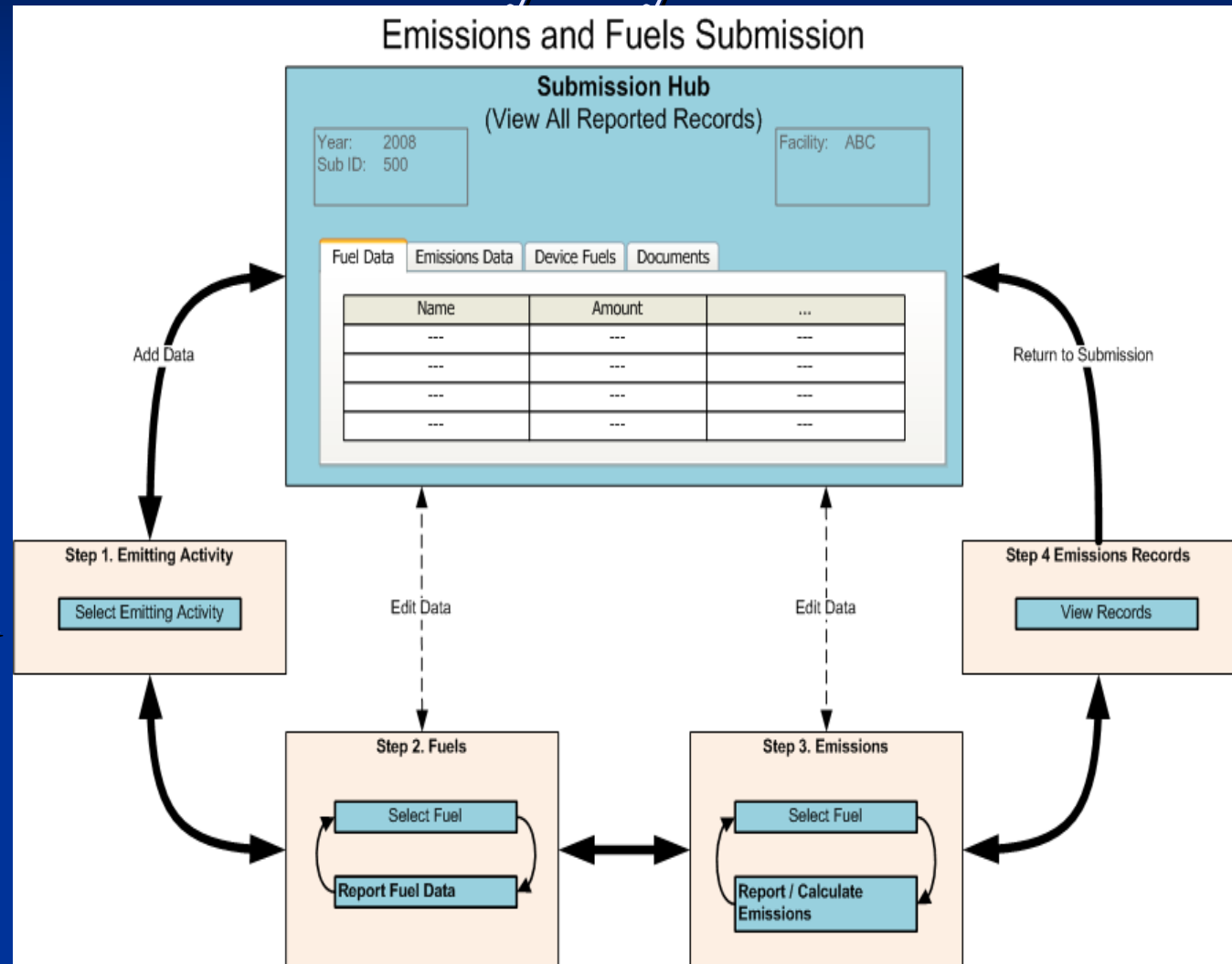
Step 5

Input Fuel Use and Emissions

- Beginning with Annual Reporting menu, select each emitting activity
- Select each fuel for emitting activity
- Input fuel use for each fuel
 - Input emissions calculation data (i.e., emission factors, HHV, carbon content)
- Select calculation method; input emissions data
- Repeat for each emitting activity until finished
- Keep track to ensure completion

Step 5: Fuel Use and Emissions Data Entry Cycle

- For each emitting activity, cycle through each fuel, and input fuel use and emissions data



Background for Reporting Fuel Use & Emissions Data

- CO₂ sampling and testing for fossil fuels is required by the regulation (Section 95110(d))
 - Except for Biomass Solids and Start-Up Fuels, for which default emission factors may be assigned
- If default emission factors are allowed by the regulation for the selected fuel, you may choose to utilize the default Carbon Content and High Heat Content, etc. values
 - You may also exercise this option for methane and nitrous oxide emissions factors

Estimating Process Emissions via the Clinker-Based Methodology (CBM)

- If the CBM is utilized, then within the tool:
 - Custom Factor 1 = EF_{Cl} (clinker emission factor)
 - Custom Factor 2 = CKD (cement kiln dust)
 - Custom Factor 3 = EF_{CKD} (CKD emission factor)
- Note: if the cement kiln dust is recycled back to the kiln, then the computation and use of the EF_{CKD} & CKD variables are not required
 - Adjust the equation accordingly
 - Custom Factors 2 & 3 are reported as 0

Estimating Process Emissions via the CBM (Continued)

- Reporting of additional data, not currently captured by the tool, is required
- Upload a supporting document showing the derivation of your plant-specific clinker emission factor
 - The following should be provided:
 - Lime (CaO) content of clinker (percent)
 - Magnesium oxide (MgO) content of clinker (percent)
 - Non-carbonate CaO (percent)
 - Non-carbonate MgO (percent)
 - This will address regulation sections 95110(a)(2)(A)(1.)(b)-(e)

TOC Background

- To estimate & report TOC in your raw materials, then within the tool:
 - Custom Factor 1 = $\text{TOC}_{\text{R.M.}}$ (0.2% Organic carbon content of raw material)
 - Custom Factor 2 = CO_2 to carbon molar ratio
- Custom Factors 1 and 2 are reported as 0.002 and 3.664, respectively (1)
- Select Other for both Custom Factors (2) and select No Unit from the UOM drop down menu for both (3)

Emissions Factors and Other Data for Selected Fuel Type and Activity

Factor Name	Default <input type="checkbox"/> All		Value (1)	UOM (3)
Annual Avg Carbon Content if measured:	<input type="checkbox"/>		<input type="text"/>	<input type="text"/>
Annual Avg Heat Content HHV if measured:	<input type="checkbox"/>		<input type="text"/>	<input type="text"/>
CO2 EF	<input type="checkbox"/>		<input type="text"/>	<input type="text"/>
CH4 EF	<input type="checkbox"/>		<input type="text"/>	<input type="text"/>
N2O EF	<input type="checkbox"/>		<input type="text"/>	<input type="text"/>
Custom Factor 1	<input type="checkbox"/>	Other (2)	0.002	kg
Custom Factor 2	<input type="checkbox"/>	Other	3.664	kg
Custom Factor 3	<input type="checkbox"/>		<input type="text"/>	<input type="text"/>

4. Save and Repeat for Other Fuels
5. Select Report Emissions to Continue

[Back](#) [Save](#) [Report Emissions](#) [Review Draft Submission](#)

Step 5:
Demonstrate
Input Fuel Use and
Emissions

Workflow for Reporting Tool

2. Register using ARB ID and Access Code
3. Input facility descriptive information
4. Input facility configuration for reporting
 - Add emitting activities, fuels, devices
5. Input fuel use and emissions for defined sources
6. Report energy and production data
7. QA and Certification of data

Step 6

Report Non-Emissions Data

- Energy and Production
 - For Cement Plants, includes electricity, heat, cooling purchased (i.e., indirect energy)
 - For reporting electricity generating units and cogen, please participate in 3/27 webinar, 10:00-12:00
 - Report Cement Efficiency Metrics
- Blue Annual Reporting Tab
 - “Create new submissions”
 - Select Energy and Production from pull-down
- Enter energy use and select provider

Step 6

Report Non-Emissions Data (Con't)

- Input data for all fields under the “Cement Efficiency Metrics” tab.

Indirect Energy Use	Energy Production	Energy Provided or Sold	Steam Production	Cement Efficiency Metrics	Hydrogen	Supporting Documentation
Report Cement Efficiency Metrics Data						
Amount Clinker *	25275	metric tons				
Amount Sold Directly *	1050	metric tons				
Amount Own Consumed *	5750	metric tons				
Amount Added to Stock *	2500	metric tons				
Type Clinker Substitute Consumed *	Gypsum					
Amount Clinker Substitute Consumed *	770	metric tons				
Type Cement Substitute Consumed *	Limestone					
Amount Cement Substitute Consumed *	900	metric tons				
Save ← Click Save before navigating off of the Cement Efficiency Metrics tab, or the data entered will not be retained.						

Enter all required fields.

Step 7

QA and Certification of data

- QA checks help ensure complete reporting
- The quality assurance system provides Warning messages and Critical Errors
 - Critical Errors or Failures must be corrected before certifying data
 - “Warnings” should be evaluated to ensure that errors are not present that affect the completeness or accuracy of the submittal
- Run separate QA on Emissions and Fuels data and Energy and Production data

Step 7

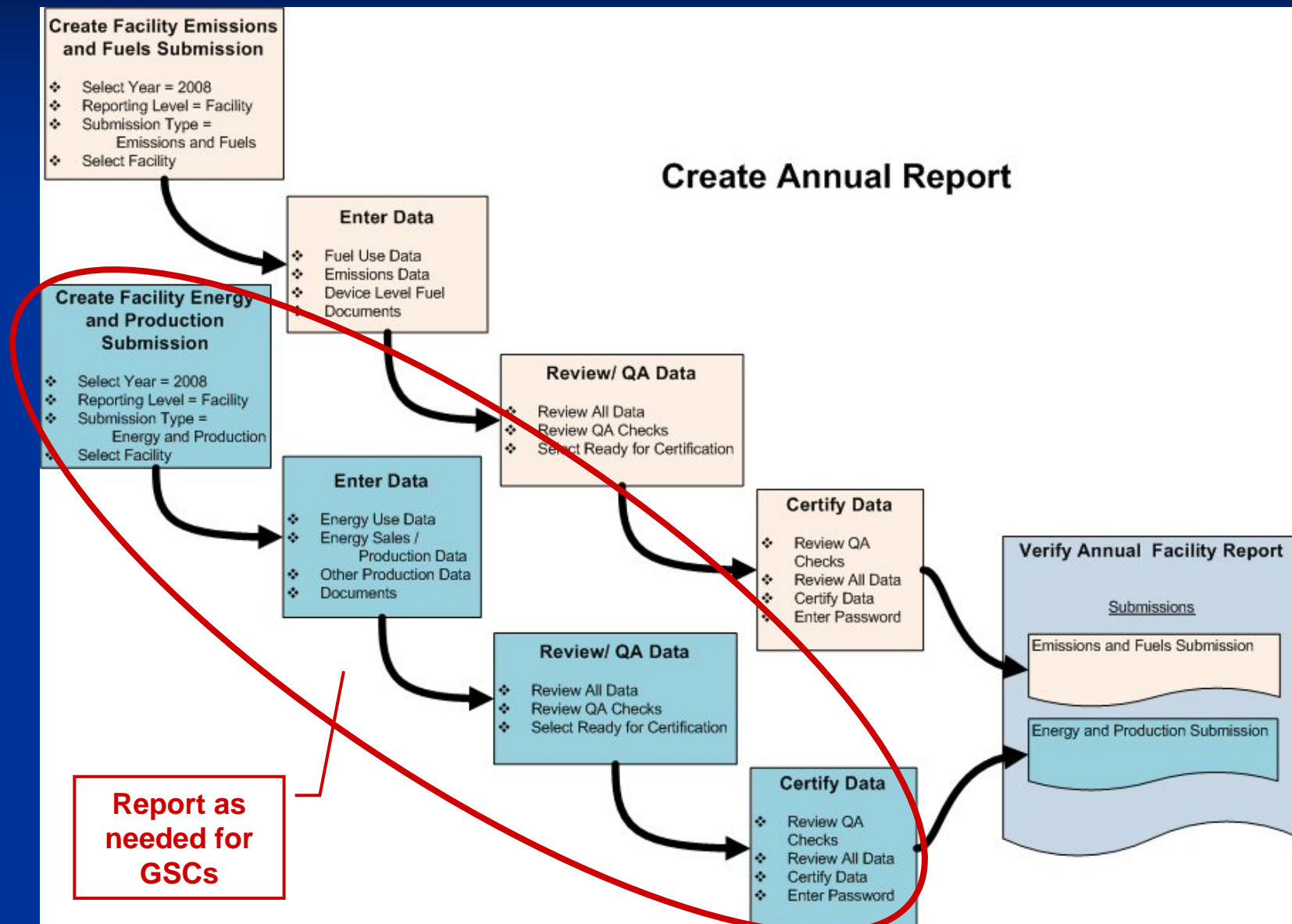
QA and Certification of data

- After QA, then “Ready for Certification”
 - Clicking locks data and queues data for Facility Manager for final Certification
- Only those designated as a Facility Manager for the facility may certify the report
 - Completing “Certification” indicates that data are complete and accurate
 - Upon Certification, data are locked and cannot be edited without unlocking data
 - This mechanism prevents editing of data during the verification process unless needed

Step 6:
Demonstrate
Report Energy and
Production Data

Step 7:
See reporting tool Users
Guide for
QA and Certification
Details

Summary of Reporting Process



CPs with Cogen or Electricity Generation

- Complex facility Case Study to be demonstrated during
Electricity Generation Training
Friday, March 27th
10:00 a.m. to 12:00 p.m.

Questions and Comments

- For verbal comments, “Raise Hand” using Webinar so we can activate your line
- Or Type question in Webinar screen



ARB Contacts

General Email Address for Questions
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Doug Thompson – Manager
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(916) 322-7062

GHG Mandatory Reporting Website
[http://www.arb.ca.gov/cc/reporting/
ghg-rep/ghg-rep.htm](http://www.arb.ca.gov/cc/reporting/ghg-rep/ghg-rep.htm)



Staff Contacts

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Thanks for
participating